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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,632

Applicant(s)

MORTENSEN, IVAN

Examiner

Amy He

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 22-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-21 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/01/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

1. The disclosure is objected to because section headings are needed in the specification. Appropriate correction is required.

Claim Objections

2. Claims 1-2, 4-5, 8, 10-12, 15-16, 20, and 25-26 are objected to because of the following informalities:

- 1) Claim 1, line 3, "the lightning current" lacks antecedent basis, replace with --a lightning current--.
- 2) Claim 1, line 5 "the resistance" lacks antecedent basis, replace with --the resistor--.
- 3) Claim 2, line 2, insert --the-- before "at least one lightning strike".
- 4) Claim 4, line 5, insert --lightning-- before "current", so as to be consistent with claim 1.
- 5) Claim 5, line 2, insert --an-- before "indicator".
- 6) Claim 8, line 2, "the blade" lacks antecedent basis, replace with --a blade--.
- 7) Claim 10, lines 2-3, "the lightning strike" lacks antecedent basis, replace with --a lightning strike--.
- 8) Claim 11, line 2, insert --a-- before "point in time".
- 9) Claim 11, lines 2-3, "the lightning strike", "the point in time" and "the increase in temperature" lack antecedent basis, replace with --a lightning strike--, --a point in time--, and --an increase in temperature--.

- 10) Claim 12, line 3, "the determined amount" and "the determined point" lack antecedent basis, replace with --a determined amount--, and --a determined point--.
- 11) Claim 15, line 2, replace the misspelled "resistance" with --resistor--.
- 12) Claim 16, line 6, replace the misspelled "at" with --a--.
- 13) Claim 20, line 2, "the blade" lacks antecedent basis, replace with --a blade--.
- 14) Claims 25-26, line 1, "the resistor element" lacks antecedent basis, replace with --the resistor--.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5 and 20-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for claim 1, it is unclear what does the recitation "the lightning strike is registered on the background of the increase in temperature" (on line 5) mean (i.e., does applicant mean that the lightning strike is registered on the **basis** of the increase in temperature? If so, correction is required).

Claims 2-5 are rejected because of their dependency on claim 1.

As for claims 20-21, the claims recites that the resistor is inserted between the lightning conducting/grounding cable and the receptor (claim 20, line 7-8; and claim 21, lines 2-3). However, this seems to be a mistake, since according to the specification and figures 2 and 3, the resistor is actually inserted between the ground 9 (not the grounding cable 7) and the receptor 6. Clarification is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 6-9, 14 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Olsen et al. (U. S. Patent No. 6, 612, 810).

As for claim 1, Olsen et al. discloses a method of registering at least one lightning strike in the blade (25) of a wind turbine (see Figure 4), characterized in that the method comprises that the lightning strike is captured by a receptor (5) in the blade (25) of the wind turbine, from where a lightning current is completely or partially conducted through at least one electric resistor (heating element 4, see col. 4, lines 42-44; or a middle section of conductors 1, 2, or 3, can also be interpreted as resistors), thereby heating it; and that the lightning strike is registered on the background/basis of

the increase in temperature of the resistor (the lightning strike is registered because of the change in temperature of the resistor).

As for claim 6, Olsen et al. discloses a wind energy plant (wind turbine as in Figure 1) comprising means for grounding a lightning current (see Figure 4), including at least one receptor (5) and at least one grounding connection (conductor 1, 2, or 3) from the receptor (5) to an external connection to ground (20), characterized in that the wind energy plant comprises means (temperature sensor capable of measuring the increase in temperature, see col. 6, line 6) for measuring an increase in temperature in at least one electric resistor (heating element 4, see col. 4, lines 42-44; or a middle section of conductors 1, 2, or 3, can also be interpreted as resistors), wherein the resistor is connected to the receptor (5) or to the grounding connection (conductor 1, 2, or 3) in a position between the receptor (5) and the connection to ground (20), preferably by being inserted serially in the grounding connection and serially inserted between the grounding connection and the receptor (5).

As for claim 7, Olsen et al. discloses that the resistor and the receptor are interconnected or made integrally (receptor 5 is interconnected to 4 or the middle sections of 1, 2, or 3).

As for claim 8, Olsen et al. discloses that the at least one electric resistor is preferably arranged in the blade (25) of a wind turbine on the wind energy plant.

As for claim 9, Olsen et al. discloses that the wind energy plant comprises a number of receptors (5 on each blade 25), said receptors being each connected to an external connection to ground (20); and that at least one electric resistor is connected to

each receptor (5) or to a grounding connection (1, 2, or 3) between each receptor (5) and the connection to ground (20) to which the receptor (5) is connected; and that the wind energy plant comprises means (temperature sensor, col. 6, line 6) for measuring an increase in temperature in each electric resistor.

As for claim 14, Olsen et al. discloses that means for measuring the increase in temperature in the electric resistor comprises a temperature sensor, which is capable of measuring an increase in temperature (col. 6, line 6).

As for claim 20, Olsen et al. discloses a system (in Figures 1 and 4) for use in the registration of at least one lightning strike in the blade (25) of a wind turbine (Figure 1), said system comprising means for grounding a lightning current, including at least one receptor (5) for mounting in the blade (25) of the wind turbine, and at least one lightning grounding cable (1, 2, or 3 connected to ground 20) coupled to the receptor (5), characterized in that the system comprises means (temperature sensor, col. 6, line 6) for measuring an increase in temperature in at least one electric resistor (heating element 4, see col. 4, lines 42-44; or a middle section of conductors 1, 2, or 3, can also be interpreted as resistors), wherein the at least one resistor is adapted to be coupled to the lightning grounding cable (1, 2, or 3 connected to ground 20) or to the receptor (5) and be inserted between a ground (20) and the receptor (5), respectively, in such a manner that the resistor will be heated by a lightning current.

As for claim 21, Olsen et al. discloses that the resistor is inserted serially in the lightning grounding cable (1, 2 or 3 connected to ground 20) and inserted serially between a ground (20) and the receptor (5), respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen et al. (U. S. Patent No. 6, 612, 810), in view of Susnjara (U. S. Patent No. 5,331,330).

As for claims 12 and 16, Olsen et al. discloses a wind energy plant as in claims 6 and 9. Olsen et al. does not specifically disclose that the energy plant comprises means for monitoring and storing at least one of the parameters comprising the measured increase in temperature, a determined amount of energy and a determined point in time, registrations of lightning strikes, or characteristics of lightning strikes, said means comprising a computer unit arranged in direct or wireless connection with means for measuring the increase in temperature, and being preferably arranged in or at the wind energy plant, including in the blade.

Susnjara discloses using a computer unit with memory means for storing calculated data of a lightning strike for the purpose of displaying the calculated result (see computer 18 in Figure 1; Claims 7 and 8).

A person of ordinary skill in the art would find it obvious at the time the invention was made to modify Olsen et al. to disclose a computer unit with memory means, as

taught by Susnjara, in connection with the temperature sensor, capable of monitoring and storing any desired parameter values, including the measured increase in temperature, a determined amount of energy and a determined point in time, registration of lightning strikes or any characteristics of the lightning strikes, for displaying the data related to the lightning strikes for further analyzing or processing purposes.

6. Claims 13, 15, 17, 18, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen et al. (U. S. Patent No. 6, 612, 810), in view of Yukio Fujiwara et al. (JP PN 59230172)(the rejection is based on the specification of the patent document).

As for claim 13, Olsen et al. does not specifically disclose that the means for measuring the increase in temperature (the temperature sensor, col. 6, line 6) comprises an electronic thermometer comprising a thermo-element, which thermo-element is arranged in thermally conductive contact with the electric resistor.

Yukio Fujiwara discloses a conventional thermocouple (11, 12) arranged in thermally conductive contact with an electric resistor (lightning arrester 1 in Figure 5), for measuring the temperature of the resistor.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Olsen et al. to disclose using a thermocouple, as taught by Yukio Fujiwara, as the temperature sensor, for measuring the increase in temperature of the resistor in the wind turbine of Olsen et al.

As for claim 15, Olsen et al. does not specifically disclose that the electric resistor is essentially enshrouded in thermally insulating material.

Yukio Fujiwara discloses an electric resistor (1 in Figure 5) essentially enshrouded in thermally insulating material (5).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Olsen et al. to disclose that the resistor is essentially enshrouded in thermally insulating material, as taught by Yukio Fujiwara, for the purpose of thermally protecting the resistor of Olsen et al.

As for claims 17 and 18, Olsen et al. does not specifically disclose that the wind energy plant comprises means of alerting or halting the wind energy plant at a given increase in temperature of the resistor; or means for dispatching an electronic message comprising data relating to the increase in temperature.

Yukio Fujiwara discloses means of alerting the wind energy plant at a given increase in temperature of the resistor; or means for dispatching an electronic message comprising data relating to the increase in temperature (i.e. the deterioration display device 14 in Figure 5).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Olsen et al. to disclose means of alerting the wind energy plant at a given increase in temperature of the resistor; or means for dispatching an electronic message comprising data relating to the increase in temperature, as taught by Yukio Fujiwara, for the purpose of displaying the detected temperature for reporting the current status of the resistor.

As for claims 25-26, Olsen et al. discloses the wind energy plant as in claim 6. Olsen et al. does not specifically disclose that the resistor is configured essentially as an elongate object having at its ends an increased expanse transversally to its longitudinal axis; or the resistor is essentially rotationally symmetrical about its longitudinal axis and comprises an opening adapted for receiving a thermo-element.

Yukio Fujiwara discloses a resistor (1 in Figure 5) configured essentially as an elongate object having at its ends (8 and 9) an increased expanse transversally to its longitudinal axis; or the resistor (1) is essentially rotationally symmetrical about its longitudinal axis and comprises an opening adapted for receiving a thermo-element (11 and 12).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Olsen et al. to disclose that the resistor is configured essentially as an elongate object having at its ends an increased expanse transversally to its longitudinal axis; or the resistor is essentially rotationally symmetrical about its longitudinal axis and comprises an opening adapted for receiving a thermo-element, as taught by Yukio Fujiwara, for obtaining an excellent resistance characteristics (page 2, lines 4-10).

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen et al. (U. S. Patent No. 6, 612, 810), in view of Kieser et al. (U. S. Patent No. 3, 760,346).

As for claim 27, Olsen et al. does not specifically disclose that the resistor is manufactured from stainless steel.

Kieser et al. discloses a resistor manufactured from stainless steel, in order to minimize unwanted air-cavity resonances (col. 5, lines 22-27).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Olsen et al. to disclose that the resistor is manufactured from stainless steel, as taught by Kieser et al., for reducing unwanted air-cavity resonances (col. 5, lines 22-27).

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen et al. (U. S. Patent No. 6, 612, 810), in view of applicant's admitted prior art (hereinafter referred to as AAP)(see instant specification page 1, lines 21-26).

As for claim 19, Olsen et al. does not specifically disclose that the wind energy plant comprises means for registering a lightning current, including a lightning registration card comprising at least one magnet strip.

AAP discloses a means for registering a lightning current, including a lightning registration card comprising at least one magnet strip is known in the art (specification page 1, lines 21-26).

A person of ordinary skill in the art would find it obvious at the time the invention was made to modify Olsen et al. to incorporate the use of a means for registering a lightning current, including a lightning registration card comprising at least one magnet strip, as taught by AAP, for the purpose of determining the maximal lightning current received on the blade (specification page 1, lines 21-26).

Allowable Subject Matter

9. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if the 112 rejection is overcome.

10. Claims 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy He whose telephone number is (571) 272-2230.


The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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December 25, 2007.